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Falling Fracture

The Reconstruction and Recovery of Clavicle Fractures

Kevin liked to get out to the park early, before the bike trails became crowded with other riders. He had taken the same trail many times and knew the challenge well. He had just put new tires on his mountain bike and was happy with how they felt as he maneuvered his way down the course. On a fast downhill portion of the ride, the front wheel of the bike suddenly turned and Kevin was sent head first over the handlebars. He was immediately aware that something was very wrong with his left shoulder. Kevin was unable to lift his left arm, and a large bump was present over the front of his chest. The emergency room x-ray revealed a severe clavicle fracture.

Clavicle fractures make up about five percent of the total number of fractures that are treated in emergency rooms across the country. The clavicle is commonly called the “collarbone” and is the horizontal attachment of the shoulder acromion to the sternum-breast bone. Most clavicle fractures occur with a fall that impacts the shoulder directly (over the handle bars) or a fall with an outstretched arm (snowboarders).

Seventy-five percent of clavicle fractures occur in the middle of the bone, twenty percent occur at the outer portion, and five percent close to the sternum. Simple, non-displaced fractures of the clavicle are generally treated with immobilization in a sling. Traumas that break the clavicle in more than on area, or displace the broken ends of the bone, often require surgery. The orthopedic surgeon aligns the clavicle bone with screws and plates to hold the bone in place while it heals. If the metal hardware causes any discomfort, it can be removed at a later date.

If you have a fall that creates the force necessary to fracture the clavicle, it probably had the capacity to stress and damage the joints at either end of the clavicle. The acromioclavicular (AC) and sternoclavicular (SC) joints are often painful and tight during the recovery phase from a clavicle fracture. Manual therapy and a program of appropriate mobility exercises will restore the function of these shoulder girdle joints. The medial end of the clavicle is one of the last bone growth plates to close. Clavicle growth plate fractures can happen in people who are in their early twenties. Growth plate fractures often require close monitoring by the orthopedic surgeon.

Post-injury, the rehabilitation protocol consists of immobilization in a sling, ice, pain medication, and once the clavicle shows signs of healing, a program of mobility exercises. Most simple clavicle fractures are much better in six weeks and full healing takes twelve weeks. Clavicle fractures that require surgical fixation take longer to heal, but the outcomes are generally good. Post-surgical physical therapy consists of soft tissue mobilization to minimize scar tissue restrictions and a program of exercise to restore function.

After eight sessions of therapy, Kevin was able to get back on his mountain bike. He returned to the same trail *four months post-surgery.*

Michael S. O’Hara, P.T., OCS, CSCS

Bounce Back Capacity

While no exercise activity could have prevented Kevin's trip over the handlebars and fracturing his clavicle, athletes involved in contact sports can reduce the risk of clavicle injury by training for better impact tolerance. Bodybuilding training protocols build a bio protective armor of muscle around the shoulders. Upper body plyometric training improves the neural signaling that will efficiently reduce forces during an impact. Both of these components are part of a properly planned strength and conditioning program. Snowboarders, hockey players, and soccer players all have a fairly high clavicle fracture rate and will benefit the most from this protective training.

Rows: Trx, Inverted, and Dumbbells

The biggest and strongest shoulder stabilization muscles are located across the upper back. The teres major, latissimus dorsi, and the rhomboids produce the forces that hold the shoulder together when it is under extreme loads.

Horizontal rowing movements strengthen these muscles. If you do not have dumbbells, a suspension trainer such as a TRX is infinitely adjustable and works well for all fitness levels. I demonstrate some of these rowing activities in the video.

Feet Elevated Shoulder Taps

The Feet Elevated Shoulder Tap will develop better stability and resilience across the front of the shoulder.

Place the feet, shoulder width apart, on a twelve inch plyo box. Start in a push up position with the arms extended and the abdominal muscles braced. Lift one arm up and touch the opposite shoulder. Repeat on the other side and alternate shoulder taps for ten to twelve repetitions. To make it more challenging throw in a push up between every shoulder tap.

Floor Press

The floor press will develop the strength that keeps the floor or opponent from impacting onto your shoulder. You can use a pair of dumbbells, but a barbell off a power rack is an easier and safer set up.

Simply get supine under the barbell and lift it off the rack. Keep the shoulder blades down the back and a tight grip on the bar. Lower the bar so that the back of the arms just touch the floor and then press the bar back up to the lockout position. Make the drive from the bottom of the lift aggressive. Perform three or four sets of five repetitions.

Wheelbarrow Walking

Improve shoulder girdle strength and endurance with this exercise.

Velcro strap the Power Wheel onto your feet and assume the push up plank position. Tighten up the gluteals and shoulder girdle muscles and a walk down the turf on your hands. Do not let your middle sag and try to keep a steady pace. Twenty yards is a good goal for a beginner.

Video for this exercise can be seen on our YouTube channel at:
http://youtu.be/jH_o3xEcpJY

Traveling Nutrition

Eating Well On The Go

Summer is here! The longer days and relaxed schedules can lead to changes in our eating habits. Whether you are busy with activities, eating out more, or taking frequent or extended vacations, we can help you stay on track while you soak up the sun.

Strategies for busy schedules require preparation.

- Create a Sunday ritual of cutting and storing produce to encourage healthy snacks throughout the week and pre-cook protein for weekday dinners in 30 minutes or less.
- Multi-task through breakfast to pack a sandwich for lunch or prepare a side for dinner in advance.
- Look to liquid nutrition when your schedule doesn't allow for a lunch break. Protein and Greens supplements provide necessary nutrients to tide you over until your next meal.

Restaurant eaters beware! Know your options and leave super-sized behind.

- Choose custom meals to meet your individual needs.
- Frequent restaurants that offer healthy options and nutritional information on the menu.
- Look up the menu in advance and pick a meal before you let hunger drive your decision.
- Remember your 5 Habits: eat slowly, limit starchy carbs, and include protein, vegetables, and healthy fats.

Frequent flyers and car travelers don't need to sacrifice nutritious meals when out of town.

- Select hotels in smart locations (local gym, groceries, healthy restaurants).
- Upgrade to a room with a kitchenette.
- Look up restaurant menus in advance to find one that fits your needs.
- Pack a large cooler in the car and fill it with healthy snacks and sandwiches.
- Bring along homemade granola/energy bars.
- Take protein powder, greens supplements, and multi-vitamins to make up for nutrients missed while away.

-Jeff Tirrell, B.S., CSCS, Pn1 Nutrition Coach

The Work-Life Balance

Finding Time for a Guilt-Free Workout

For me, summer signifies equal parts relief and anxiety, and I know I'm not alone. While I welcome the warm air and sun, work doesn't stop at the end of the school year. Working parents shift from school schedules to summer activities, and while we remain busy and on task, our children have more freedom and want to spend more time with us. Finding time for ourselves, especially at the gym, often feels like a selfish, unattainable act.

Sara Kooperman, owner and operator of SCW Fitness Education and mother of four describes it like this "…there is a personal and professional split with a hearty dose of guilt thrown in. I don't see my life purely as time management, but I see it as guilt management."

So how does a working parent carve out time for a 60-minute workout and remain guilt-free? We just do it. After a few years of working around physical therapists, and more recently experience with my own back pain, I am more aware than ever of the importance of maintaining one's health. We parents need to be strong and healthy. It is our responsibility to take care of ourselves, so we can take care of our kids and/or our aging parents.

We must shift our focus, quiet the guilt, and make fitness a priority. Consistent workouts lead to better sleep quality, increased energy, stress reduction, and more production during the day. Moreover, you become a positive role model for your children by showing them how staying fit and active makes you a better parent.

-Amy Warner, Director of Sales and Marketing

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Fenton FITNESS & ATHLETIC CENTER

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The Summer of Symptoms

"Dude, my knee hurts."

Monica had been bothered by right knee and hip pain for three months. The pain started in June and gradually became worse. Monica attributed the pain to the lifting and carrying she performed in her summer job as a poolside lifeguard.

She tried Motrin and stretching exercises, but the pain just got worse. Eventually the pain limited her capacity to exercise and transfer out of a chair. Monica had an MRI on her knee and was provided with a knee brace to help control the "excessive movement of her knee cap." The pain persisted, and in August, Monica found her way to our clinic.

During her physical therapy evaluation we were unable to find anything painful or abnormal in her knee or hip. Monica had tight ankles and flat feet. She walked with a toe out gait that was worse on the right. During her interview, Monica reported the pain increased during a workday that required more walking. If she rested, the pain was less intense. Prior to this pain problem, Monica was a pain-free college student who ran two or three miles and walked to her classes every day. On further questioning, Monica provided the answer to her problem.

Monica wore flip-flops at work, and during the summer, she often wore them after work. The biomechanics of walking with a flip-flop sandal are dramatically different than that of a heel- backed shoe.

In 2008, researchers at Auburn University documented alterations in gait mechanics occur with a flip-flop type footwear. They used computer motion capture technology to evaluate the gait pattern of thirty-nine students in standard footwear and in flip-flop type sandals. Stride length and stance time were decreased when the students wore the flip flops. When the student walked in the flip-flops, the foot struck the ground in a more vertical tibia alignment and the hip rotated outward.

When you walk in a flip-flop, the toe flexor muscles in the bottom of the foot must work to hold the sandal on the foot. The tendons that cross the ankle create greater joint tension and the lower leg is unable to attenuate forces efficiently. The ankle is unable to fully flex and extend and this alteration in movement radiates up the leg to the hip and knee joints.

We had Monica rest from running and wear a heel backed sandal at work in place of her flip-flops. She was instructed on a series of ankle mobility exercises and single leg stabilization drills. In five days, the pain with walking resolved, and in two weeks, she returned to pain-free running. Monica now knows she must avoid foot wear that does not support a healthy gait pattern.

-Michael O'Hara, P.T., OCS, CSCS

Additional Resources

www.fentonphysicaltherapy.com		www.fentonfitness.com	
Join our email list	Articles, videos, more	Like us!	Watch us
barb@ fentonphysicaltherapy.com	www.mikeoharapt.com	facebook.com/FentonFitness	youtube.com/user/FentonPT